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CSCI 3104, Algorithms **Profs. Chen & Grochow**

Quiz 8 Q1 S16 **Spring 2020, CU-Boulder**

Instructions: This quiz is open book and open note. You **may** post clarification questions to Piazza, with the understanding that you may not receive an answer in time and posting does count towards your time limit (30 min for 1x, 37.5 min for 1.5x, 45 min for 2x). Questions posted to Piazza **must be posted as PRIVATE QUESTIONS.** Other use of the internet, including searching for answers or posting to sites like Chegg, is strictly prohibited. Violations of these are grounds to receive a 0 on this quiz. Proofs should be written in **complete sentences. Show and justify all work to receive full credit.**

Standard 22. Suppose you have 8 stairs to climb. You may choose to jump up either $1, 2$, or 3 stairs. Your starting position is on the ground floor and not on the first stair. Your goal is to count the number of ways to climb the stairs.

Use dynamic programming to fill in a table that counts number of ways to climb from the ground floor to each stair j for $1 \leq i \leq 8$.

I am going to assume that when you are standing on the 8th step, you are at the top of the stairs and cannot take another step up.

Step	# of Paths up
Ground	21
1	18
2	15
3	12
4	9
5	6
6	3
7	1
8	0

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